THE HIGH SCHOOL JOURNAL

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IN-SCHOOL TEACHER EXCHANGE:
A Device for In-Service Training

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Superintendent City Schools, Greensboro, N. C.

TEACHER exchange within the school system has been found to be a valuable means for in-service training. How it came into practice, how it is administered, and what are some of its benefits will be stated in subsequent paragraphs.

The first use of the device within the author's experience was made in the Shelby School System during the depth of the depression in the school year 1933-34. There were no longer available funds for the well accepted practice of providing for visitation of teachers to other school systems for observation purposes. But coupled with the knowledge of the benefits of this practice and the great regret over having to give it up, was the experience of student-teacher exchange with Winthrop College. This latter practice had proved also to be beneficial. It occurred that an in-school teacher exchange would promise some of the advantages of each without the expense of either. Moreover, it was conceived that other benefits might result. The experiment met with such favor that it was repeated and the practice extended to the Greensboro School System during the year 1936-37.

The administration is simple. An exchange of teachers is announced for two appointed dates that are ten days to two weeks removed from the announcement date. One day of regular operation between the exchange dates is considered advantageous. Half the teachers to participate are designated for the first date and the other half for the second date. The designations are made to extend over all grades or departments. Each teacher is paired with a teacher from another school. Care is taken to include the largest possible number

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of different schools. Within the ten days or two weeks of advance notice, teachers who are paired meet, exchange information, arrange for records, materials, etc. and proceed to make plans. On the appointed day each reports to the other's room and executes her plans —the while she learns as much as she can.

Beneficial results are believed to arise from the exchange. It affords teachers a new and fresh point of view and enables them to get out of a rut—the bane of experience. An acquaintance with the teachers of the system is facilitated. Observations are made possible of materials in use and of methods of handling routine matters. Confirmation of one's good procedures is found. New ideas are discovered. A broader outlook for the educational endeavor is obtained. Integration of the system is enhanced. One discovers the difficulties and the satisfaction of the other's position. A greater appreciation of the regular work results or a change to the more satisfactory assignment is sought.

Children profit. Any loss of attainment for the day is offset by the stimulation gained for succeeding days. Even so, there are immediate benefits revealed. The disposition to give a good account of the class and properly to receive the visiting teacher augments achievement and promotes hospitality.

A few excerpts taken at random from teachers' reports follow:

"When I first heard that we teachers in the Greensboro School System were to exchange classes for a day, I will admit I was rather doubtful as to the good that would be derived from such procedure. After having given the experiment a trial, as a teacher of mathematics at Senior High School, I consider myself fortunate in being allowed the privilege of teaching a day at Central Junior High School. It was indeed one of the most profitable days I have spent since entering school work. - - - - - Personally, I would be pleased to see this exchange repeated as I think it highly profitable to me as a classroom teacher."

"The experience has given me another point of view."

"I came away feeling I should like to teach that grade."

"Such an experience makes me more ambitious."

"The exchange was just the thing we needed to let us know what is going on in the other schools."

"I was impressed with the interest of pupils in current topics."

"The supplementary reports indicated that provision has been made for individual differences."

"A vacant period is a distinct advantage in organizing the class work."

"I got lots of ideas from a library unit."

"After my visit I can return to my work with zest and deeper appreciation."

"It was an opportunity to become acquainted with my fellow teachers. They were cordial and helpful."

"Grammar grade teachers certainly have to be 'on their toes'."

"Children were attentive and otherwise courteous."

"I was impressed with the systematic habits of work and the interest of pupils."

"I realized more than ever the difficulty of adjustment that a grammar grade pupil has to make upon entering high school."

"A teacher who has entire control of one group of children all day has a wonderful opportunity for personal contact and influence that the departmental teacher can never have."

"A secretary can be extremely helpful."

"The bulletin board revealed several new ideas."

"The cafeteria affords an excellent opportunity for giving health instruction."

"The visit gave me inspiration."

"I observed evidences of progressive checking through charts."

"The unit method of instruction was interesting."

"Field trips have been used to good advantage."

While adverse criticism was discouraged, there were pointed out some deficiencies that needed correction. Several valuable suggestions were made.

The idea was unfavorably received by a minority. Several teachers stated that they considered the day unprofitable to pupils. A few complained of an artificial atmosphere. A very limited number saw no professional benefit in the interruption.

If an exchange program is to be inaugurated it would be well to include at the outset only those teachers who are sympathetic and open-minded toward the experiment. Some are more comfortable in a rut and would go into the project with a mind-set against it. An understanding of the purposes should be given. Careful plans should be made. There should be utilized the fullest possible opportunity for observation of rooms, playground activities, assembly programs, cafeteria operation, library service, and other school facilities and functions. Exhibition, artificiality, or parade should be discouraged. A brief, written report should be expected. The scheme should not be considered a panacea; nor should it be presumed to take the place of other desirable types of visitation and exchange. If it is so approached, definite benefit will result.

"EXCELSIOR": A LETTER TO MISS BICKLEY'S CLASS

COPY

University of North Carolina
Chapel Hill

December 8, 1937

Miss Evelyn Bickley
Henderson High School
Henderson, North Carolina

Dear Miss Bickley:

Enclosed is " 'Excelsior': A Letter to Miss Bickley's Class," which carries out the promise made to you in my letter of recent date. I hope it will arrive in time to be of some use to you.

Perhaps you will be overwhelmed by the length of the "Letter." I didn't think it would be so long. My only excuse is that when I started it I had in mind to tell you how I would go about teaching "Excelsior" to a class of high school freshmen. I wanted to be concrete, just as I should have to be, and just as you will have to be, in actually teaching the poem to the class. I didn't think an outline would do the trick very well.

You'll note that I had the class directly in mind, and addressed the letter to the girls and boys themselves. I hope it is not too long to be read to them.

I don't know how long your class periods are. They may be too short for you to read the whole letter in one period. If so, I suggest that you read to the paragraph "At long last . . . ." on page 10 the first day, and the rest the second day. Even three or four recitation periods would not be too great a price to pay to learn how to read a poem, would they?

But before reading any part of the letter, it would be well to "tip off" John and Mary and Jimmy and George and Jane and the rest; that is, give them in advance their assignments of "things to look up."

You will understand, of course, that I would not propose so lengthy a process for the study of every poem. Life wouldn't be long enough for that. I take it that the class is probably beginning the study of Longfellow. It probably has not had much formal training in the reading of poetry. Though I have no high opinion of "Excelsior," it is a good poem for pupils to begin on. I am making it a means of getting acquainted with the technique of reading poetry.

If you like my approach, you will be able to devise ways to get the active coöperation of the class. I have suggested most of them. And if you wish to tie up the writing with the poetry, I think my method will lend itself to the assignment of plenty of good writing topics.

If you find the "Letter" helpful, and you and your pupils would not object to my publishing it, I may offer it to the *High School Journal* or *North Carolina Education*. Please write me about it.

Yours very sincerely,

Arthur Palmer Hudson.

The University of North Carolina
Chapel Hill, 7 December, 1937

The Freshman English Class
Henderson High School
In care of Miss Evelyn Bickley
Henderson, North Carolina

Dear Boys and Girls:

It seems quite natural for me to be addressing Freshman English pupils. It happens to be a large part of my work here, as Chairman of Freshman Composition, to direct 23 English teachers and over 800 English students.

Your teacher, Miss Evelyn Bickley, who was once a student of mine at Chapel Hill, has asked me to tell her how I would go about teaching Longfellow's "Excelsior" to you.

When I first read her letter, I thought maybe Miss Bickley was joking—just giving me a dare in fun. But she wrote that she had heard of complaints from Chapel Hill about what poor themes our University freshmen write, about how little they remember from their high school literature, and about how badly they read. So maybe she was in earnest. Maybe her letter was not just a dare. And maybe I had better do something about it.

I really think I ought to try. You see, it's this way: The University of North Carolina is a big school for grownups—the place where, I hope, some of you will study sometime. But though it is a big school for grownups, and most of its professors are middle-aged or older, it is still a place where some people teach, and some people learn, the Three R's. You know what the Three R's are. But perhaps you don't think of Greek and Latin, French, German, Italian, and Spanish, English literature and composition, history, mathematics, astronomy, biology, chemistry, physics, and geology, philosophy, and all the rest of the high-sounding *-ologies* and *-ics* as Three-R subjects. Yet they are. Of course you will agree that the language and literature subjects are reading. And what is making poems and plays and essays and stories but writing? And those who ought to know tell me that mathematics, even the dizziest and toughest kind, uses arithmetic constantly, is, in fact, a sort of highbrow arithmetic. So there's your second R! But what, you say, about astronomy? Well, from what I know about it, that is a way of reading the heavens, to find out how big the sky is, how many stars there are, how far off and how big they are, how fast they move and in what directions, whether life can exist on them, and other questions of that sort. And every astronomer I've ever seen was reading the heavens through a telescope, or instrument pointer marks, or bands of light colors; or he was figuring out distances and weights and pulls, and so forth; and writing all these things down. Aren't these all *Three* R's? After this example, I dare you to ask me how any of the subjects I have named, or any that you can name, are Three-R subjects. And I dare you to prove that if you were to spend all the rest of your life in study you wouldn't be spending most of your time on the Three R's. You see, don't you, how important are the sub-

jects that you are studying now, both for you after you have left school and gone to college or into your life work and for us if you happen to come up to Chapel Hill and let us try to teach you some more about the Three R's?

So, since your teacher was once a student of mine in two of the Three R's, and since I'm in a big school teaching the Three R's, and since some of you may come to Chapel Hill some day to learn more about them, I'm sure Miss Bickley is quite right in asking me how I would teach "Excelsior" to you.

But instead of telling her how I would teach the poem to you, I'm going to ask you to *read* it with me. We'll have a sort of correspondence course—that is, if you will write me what you make of the poem, and tell me where you think I am wrong, and ask me about points I don't clear up and you can't either. It's going to be a little awkward, because I don't know you and neither do you know me, and we can't watch each other's face, and I can't quiz you and neither can you quiz me. It may be slow, because we can't ask and answer questions on the spur of the moment by mail. But I'll do the best I can. I hope you will, too. And if we both do the best we can, I think we're going to have some fun.

I think we're going to have some fun because that is the way I think of reading. It's been more fun to me than any other one thing in my life, unless it's eating. It's even more fun than fishing, which I can't do often, or than golf, which I dearly love to play, but can't on busy or rainy days or, of course, at night.

To my way of thinking, reading a poem or story or play, or anything else that deserves the name of literature, is not merely recognizing the words that the letters spell out. It's not merely making with my lips or inside my throat, or registering in my brain, or saying aloud, the sounds of the words. It's not merely understanding what each word, each sentence, each line, each stanza, each paragraph, or chapter says. It's not merely understanding the whole piece or work. Reading this way, one might *learn* a great deal. But also one might be bored or even tortured. No, it might not be fun if reading were no more than that—understanding thoroughly. But it is all of that and then something more—a great something more. It is *living over* or *through* what one reads that way— living over it or through it as completely and joyously as possible, with understanding and imagination and feelings all at work or play. We'll see, I hope, when we really get hold of "Excelsior." Laugh as much as you please if I seem to ask silly questions and guess wrong about your answers.

Let's pretend this is the first time you have ever read this poem. Let's try to pretend this is the first poem you ever read. I'm going to ask you a great many more questions, and tell you much more, about this poem than will ever be necessary to spend on so short a poem again—I hope! But if we learn to read this one right, we can read other poems right, in much less time and with more fun. Just remember that the poem *was* new once, whether it is to you now or not.

Now let's open our books—that is, if we don't already know the poem by heart. What do we first see? " 'Excelsior,' by Henry Wads-

worth Longfellow." That's the way we think of the poem when we think of it as a whole—a title and the name of the author. Before we actually begin reading it, I want you to tell me something. And then I'm going to tell you something. That's the way we'll work.

I want a volunteer for a job in literature, history, and geography. Longfellow got the title of this poem from the coat of arms (the Great Seal) of one of the states in the general region where he lived. Where did he live? For what states, then, would you have to look up the coats of arms? Where would you find them? Who will look up the coats of arms of these states and find the one from which Longfellow got his title? While our volunteer is getting the answer, we'll go ahead.

John—surely there's a John in the room—John, why don't peach canneries ship out their peaches in just the bright tin cans that hold them? That was easy, wasn't it? Well, why don't canners or grocers just paste a white slip of paper on the can with "PEACHES" printed in black letters? Why, then, do they wrap the can in a brightly-colored picture of, maybe, a pretty Carolina or Georgia girl holding a cluster of pink and yellow Georgia Belles?

Now, Mary—surely there's a Mary in the room too—Mary, what's the good of a title to a poem? What does it tell us? Does it try to *do* anything to us? What? I guess that was easy too, Mary.

Next, Jimmy—surely if there's a Mary, and a John, Jimmy's not missing: Jimmy, what does the title of this poem mean? Did you know to begin with? If not, how did you find out? Jimmy, what did you first think of when you saw the word "Excelsior?" Who could help thinking that? Once I taught a boy who said that the poem was well-named. I asked him why. He said, "Because I think the hero was not only a wooden-head, though really he wasn't as solid as that; he had his head stuffed with excelsior instead of brains." Thank you, Jimmy, for not bringing that up. Wait, now: Before we agree with the boy I taught, let's be fair. Let's read the poem. And now maybe our Volunteer can report on where Longfellow got the title. Thank you, Volunteer. We think better of our title now, don't we? Surely the New Yorkers way back yonder in the early days of our country weren't wooden-heads, or suckers, either. It's not Longfellow's fault that the advertisers got hold of his title. And it's not his fault, either, that generations of your elders got prejudiced against the poem because they had to learn it by heart or listen to recitations of it all the way through school. But to get back to our questions. What, then, do you think the title of the poem was meant to suggest?

Our next line is "By Henry Wadsworth Longfellow." Now, what does this mean? Merely that Longfellow wrote the poem? It means a great deal more than that. I'll try to tell you.

Every poem—for that matter, every piece of true literature—tells what somebody did, or knew, or thought, or felt. It may tell about one of these kinds of experience, or it may tell about all four kinds. So there are four common kinds of material in a poem. Let's call it *subject-matter:*

Action—what is done, what happens;
Knowledge or *Fact*—what the writer says or hints that he knows;
Thought—what the action or the facts or the knowledge means to the writer's mind and to ours;
Emotion—How and what the writer feels about the action or the facts or the thought; how we feel about them, too; what all this means to the *heart*.

And there's something else. It isn't exactly in the poem. The poem is in it. We call it *form*. In a poem, form means feet and lines and stanzas and structure (the *way* the action or the facts or the thoughts are put together). Still there's something else about a poem. The words are in it, and it is in the words; the words belong to it, and it belongs to the words. The feet and lines and stanzas are set to it, and it to the feet and lines and stanzas. You guessed that, didn't you? *Music*. A poem, then, has:

I. Subject-matter
  1. Action
  2. Knowledge or fact
  3. Thought
  4. Emotion
II. Form
  1. Versification
  2. Structure
III. Music.

} All in one and at the same time—not one at a time.

Phew! That's kind of hard to see, isn't it? A poem is all of these things; not one after another, but all at once. The many things are one, and the one is many things. There's nothing any stranger about that than there is about a tree. A tree is roots and trunk and bark and branches and leaves and flowers and fruit, and roots and trunk and bark and branches and leaves and flowers and fruit are a tree.

All this I have said to tell you that when we read "Excelsior" or any other poem right, we get all these things—subject-matter, form, and music—at once, together. Not only that; we get pleasure—fun, if you please. To read a poem in this way is at the same time one of the most difficult and enjoyable experiences in the world. It is a sort of miracle, a glorious miracle. It is one of the hardest and noblest tests of an education and of a boy's or girl's, man's or woman's body, mind, and soul.

I said that reading a poem in this way is an experience. It really is. In its deepest and fullest sense it is sharing the experience of the man who wrote it at one of the best and happiest moments of his life. It is living over, in our hearts and imaginations, for the moment, the life of another and adding to the stature and fullness of our own. Once we have had such an experience, we never quite forget it; we are not quite the same as before.

But let's get back to our poem itself. "Excelsior" is about something that somebody did—what he did or was trying to do, what he thought maybe, how he felt; what others thought and felt about him; what we think and feel about him. In a way, that somebody was

Longfellow himself; in a way it was only the somebody Longfellow wrote about; and in a way, too, maybe, that somebody is ourselves. We can be sure that when Longfellow wrote about this somebody he was thinking of himself and imagining he was that somebody.

This thought brings us to Longfellow himself. Nearly everything we may learn about Longfellow will help us understand this poem and share his experience and that of the somebody he wrote about. And what a lot there is to learn! I need help.

Here I think we'd better call on Jack. (I'm sure there's a Jack in the class. There was a Mary, and a John, and a Jim). Jack, you tell me and the class what you know about Longfellow. When did he live? Where? Where did he go to school? What was he interested in? What interesting things happened to him when he was a boy or young man? What did he do for a living—just write poetry? How old was he when he wrote "Excelsior"? What difference does that make? What else did he write? Did he write anything else like "Excelsior"?

Now, I want to tell you some things about Longfellow, bearing on this poem, that Jack may have left out or failed to emphasize. (You see, I didn't hear Jack). And, Miss Bickley, if you think of anything else, please add it. The same invitation goes for the whole class.

Did you ever see a picture of Longfellow? I'll bet you saw the same picture I saw when I was in school: an *old* man—"the most beautiful human countenance" the author of *Water Babies* and *Westward Ho!* said he had ever seen; but an *old* man, with white and woolly whiskers, like Santa Claus', maybe you'll say; looking a great deal like Robert E. Lee; but an *old* man. Has it ever occurred to you that Longfellow was young once, like you? Well, he was. He was a young man when he wrote "Excelsior," wasn't he, Jack? Just thirty-four, wasn't he? That isn't old, is it? At any rate, I am sure that when he wrote the poem he was thinking about the boy he had been. He was that boy again, with a grown man's brains. I am sure, too, that he kept young longer than most men. He had a houseful of children, his own and the neighbors' that came to play in the old Craigie House at Cambridge, where Washington had his headquarters once. (Do you know "The Children's Hour"?) And he taught generation after generation of boys and young men at Harvard. He must have been a young-spirited teacher, for the Harvard boys were "crazy" about him.

As a boy, Longfellow had every reason to love young and beautiful and noble things. He grew up in a young country. His home was in Portland, Maine, which was then, and still is, one of the most beautiful little cities in America. (Tommy, look up Portland on the map). The map will tell you that Portland is on Casco Bay, along the rockbound coast of Maine; but no map can tell you that this bay, studded with bold, bright, green islands, is one of the loveliest in the world. To see the whole picture and feel what Longfellow's life as a boy was like there, over a hundred years ago, when the great white sails swam in from the Seven Seas, you should read another poem of his, "My Lost Youth." There he remembers "the beautiful town . . . by the sea," the "shadowy lines of its trees," the "islands that were

the Hesperides." (What are the Hesperides, George?) And, he says:

I remember the black wharves and the slips,
  And the sea-tides tossing free;
And Spanish sailors with bearded lips,
And the beauty and mystery of ships,
  And the magic of the sea.
And the voice of that wayward song
Is singing and saying still:
  "A boy's will is the wind's will,
And the thoughts of youth are long, long thoughts."

He was a boy of five or six when the War of 1812 was fought. Of this, he says:

I remember the sea-fight far away,
  How it thundered o'er the tide!
And the dead captains, as they lay,
In their graves, o'erlooking the tranquil bay
  Where they in battle died.
And the sound of that mornful song
Goes through me with a thrill:
  "A boy's will is the wind's will,
And the thoughts of youth are long, long thoughts."

His father was a successful lawyer and a congressman. His mother taught him to read and enjoy poetry. He sums up his boyhood in those two magic lines from an old song he had read:

"A boy's will is the wind's will,
And the thoughts of youth are long, long thoughts."

At Bowdoin College, he was a friend and college-mate of Nathaniel Hawthorne and Franklin E. Pierce. Don't you suppose it meant something to play and study with one boy who was to be a great novelist and another who was to be President of the United States? From the college he wrote home a charming and boyish letter about some poems he had read by the author of "Elegy in a Country Churchyard." (Who was that, Jane?) He was class poet and graduated with honors when he was only eighteen. (Dear me, he must have been a college freshman about the time you boys and girls are high school freshmen! How explain that?)

A year after his graduation young Longfellow did an extraordinary thing, for an American student of that time. He hadn't liked law with father, and Bowdoin College offered him a position as teacher of modern languages; so he went to Europe to prepare himself for his work. Remember that this was back in the days of uncomfortable little ships that required one to two months to cross the stormy Atlantic. He spent three years studying in England, France, Germany, Italy, and Spain, and Switzerland. (Does "Excelsior" have anything to do with any of these countries?) And he learned all the languages of those countries. He was one of the first Ameri-

can teachers to learn to read and speak German, and he was one of the first modern language teachers in this country.

While he was in these romantic and beautiful Old World countries, the poets and story-tellers there were making up lovely tales about times gone by—the knights and ladies of the Middle Ages and chivalry, the Vikings, and the old but ever-young Greeks. They were learning a religion of nature. They were declaring that poor and humble men and women make good subjects to write poems and stories about. They were dreaming dreams of a better world that was to be. You'll remember that Longfellow said:

> And the thoughts of youth are long, long thoughts.
>
> There are things of which I may not speak;
> There are dreams that cannot die.

He was a romancer and a dreamer, too. So we may be sure he read all these tales and dreams, for he translated many of them when he came back home to teach. And he read, also, two poems by two young English dreamers. One of these, by Percy Bysshe Shelley, is entitled *Alastor*. Alastor is the story of a young college graduate who while touring the world dreamed, one night, that a beautiful, angelic spirit visited him. He arose to follow her, over the ocean in a frail skiff, around whirlpools, across snowy mountains, up a little mountain river, to a great pine where he died, alone but happy in his fate. On his way he was loved at first sight by country girls, but he didn't give them a thought. He was warned of dangers from avalanches and swift rivers, but on he went in pursuit of his Dream Maiden. This little sketch reminds you of "Excelsior," doesn't it? So would a sketch of John Keat's *Endymion* if I told you about it.

At long last, since we know something about the somebody who wrote about the somebody in "Excelsior," let us look at the poem again.

John, read the first two stanzas so that they will sound like sense and like poetry too. Was John's reading good or bad, class? You see, I have to imagine how John reads. Now I want to ask John some questions.

John, who is the somebody this poem is about? Why didn't Longfellow give him a name? Was the youth really Longfellow, do you think? Is he, in a way, you? I can't ask you whether he may have been like me when I was young. But I'll plead guilty. In a way, he was like me, or I was like him, when I was young.

What did the Youth do? Where did he do it? How do you know? At what season of the year? Does the season make any difference? Why? Was this just a crazy college boy skiing up the snowy Alps, waving his college pennant? How do you know? What is "a strange device"? What was *his* device? Who thought it was strange? Why did they? Did that have anything to do with people's understanding him?

How did the Youth feel? Why do you think so? Did he feel just *one* way? Why do you think so? What is a "falchion?" a "clarion?" Did the Youth have either or both? Why are they men-

tioned? Did the Youth say anything? Did he speak the same language as the Swiss? How do you know? Does the poem say what the Youth was *thinking?* Does it hint? If so, what?

I'm going to let the class nominate someone to read the next three stanzas. This person must be a good reader. He or she not only must read the passage well aloud, *but also must ask questions about these stanzas like those I have asked.* If he or she doesn't ask good ones, or misses asking those that ought to be asked to get at the facts and bring out the meaning, he or she must answer questions the others ask. Miss Bickley, you referee.

Next, in the same way, we'll choose a reader for the last two stanzas and let him or her do the same sort of thing.

Here we come to one of the biggest questions of all. It sums up all that have been asked down to this point, I think. What *one main thing do you think the poem means?* Let us sum up before we try to answer the question. A Youth carrying a banner inscribed with a word meaning "Higher" passes through an Alpine village one evening in mid-winter. His brow is sad, but something inside him makes his eyes flash and draws him on, shouting "Excelsior." He passes warm fires, risks the dangerous mountain pass, refuses the pity of the mountain girls (who make eyes at him, perhaps), walks under the shaky dead pine, and finally dares the awful avalanche. We know what is going to happen to him there because of the last warning—

This was the peasant's last Good-night.

The monks find him next morning, frozen to death but still grasping his banner. And they hear a voice "from the sky, serene and far," faintly crying "Excelsior." Has the Youth lost out in the end? Has he been beaten at last? Now, what is the main idea or thought?

If you can't answer this last question, I'm afraid my teaching has been at fault, or maybe you have been at fault. You may have to ask Miss Bickley what she thinks.

But, remember. Neither Miss Bickley nor I can give the answer that is perfectly right for you. Why? Because, as I said, if you have really lived Longfellow's and the Youth's experience, it is *your very own* experience now, and only you can describe it satisfactorily to yourself. Nobody else can exactly describe it for you.

There are some more questions. I said every poem has *form.* Read the first line of the poem, making your voice hit a little harder on the syllables that it naturally hits anyway, and write it down thus:

The SHADES of NIGHT were FALLing FAST.

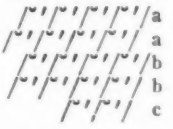
Write stress marks (′) over the syllables that your voice hits hard, and circumflex marks (˘) over those that it touches lightly, thus:

The shades| of night| were fall|ing fast.

What do you notice? There's a regular pattern of unstressed and stressed syllables, thus:

/˘ ′/˘ ′/˘ ′/˘ ′/.

Each unit of this pattern is called a *foot.* The noun naming this kind of foot is *iamb;* the adjective describing it, *iambic.* You count four such feet in this line. Two Greek words, *tetra,* meaning four, and *meter,* meaning measure or foot, are joined to tell how many feet there are. The line, then, is said to be an *iambic tetrameter.* If you will scan, that is, describe and count, the feet in lines 2, 3, and 4, you will find that they have the same kind and the same number of feet; that is, they are iambic tetrameter lines. Moreover, the first and the second, the third and the fourth lines rime. Let's represent "fast" and "passed" with the letter *a,* "ice" and "device" with the letter *b.* The fifth line, one word, "Excelsior," is also in iambic feet. It is called an iambic *dimeter* (*di* for two, *meter* for foot). Its last syllable, "-or," does not rime with any of the preceding lines. We'll represent it with the letter *c.* You'll notice that "Excelsior" is repeated in the same place in every succeeding stanza. Such a repetition is called a *refrain.* All five lines constitute a *stanza.* A complete description of the versification of the poem, then, would be this: "Excelsior" is a narrative (i.e., story-telling) poem in iambic tetrameter riming couplets (aa bb), with a non-riming dimeter refrain (c). A plot of the scansion would be written thus:



Now, go back and recall the way I suggested that you read and discuss the poem. Why do stanzas 1 and 2 go together? What do they tell us? Why stanzas 3, 4, 5, and 6? What do they tell us? Why stanzas 7, 8, and 9? What do they tell us? Why is stanza 6 the most exciting? What does line 3 lead you to expect?

> It was the peasant's last Good-night.

This point might be called the *climax* (the turning point). What does that mean? How are stanzas 7, 8, and 9 related to the climax? What meaning do lines 3-5 of stanza 9 suggest for the story?—

> And from the sky, serene and far,
> A voice fell, like a falling star,
> Excelsior!

These questions and your answers to them explain what I meant when I said a poem has *structure.* Structure means the way the parts are put together. A good poem has a beginning, a middle, and an end. Stanzas 1 and 2 are the beginning *(introduction);* they tell us who the somebody is, where he is, what the time is, and what he has begun to do. Stanzas 3, 4, 5, and 6 are the middle *(rising action);* they tell us what the somebody did, what the climax (turning point) is, and thus how the story is going to end or is likely to end. Stanzas 7, 8, and 9 are the end (*falling action* and *catastrophe*); they tell us how the action turned out. Furthermore, they suggest to a thoughtful reader the *meaning* of the story.

I said a good poem is set to music, and makes music. You didn't hear any instrument played? Yes, you did. Whether it was played well or badly I don't know. But you heard it. You heard the oldest musical instrument in the world, and the best—the human voice. You heard that voice rise and fall on the feet of the verse, run up and down the scale on the lines, play a melody through in the stanza and then start over—all just as in a song. The feet and the lines run through a pattern that is the same, only a little different each time. Notice what voice and sense do at the end of line 1. They pause, don't they? Compare what they do at the end of line 2. They run hurrying on, don't they? Look through the other stanzas this way. Why are some of the lines *end-stopped* and some *run-on?* Are lines end-stopped and run-on at the same places in each stanza? Why? Suppose they were all end-stopped in each line, or suppose the end-stops and the run-ons were at exactly the same places in each stanza: How would the poem sound? What does the third line in stanza 4—

The roaring torrent is deep and wide—

sound like? Why? How should the next to the last line of the poem be read—

Ă VOĺCE fĕll LĺKE ă FĂLLĭng STĂR?

or

Ă VOĺCE FĔLL lĭke ă FĂLLĭng STĂR?

Why? What difference would it make how you read it? These and scores of other questions you might ask and answer will show how sound and sense are married in a good poem to make *music.*

I have one last big question to ask. It has some little ones tied up in it. But it will really be my last. Before I ask it, let's check up a bit.

"Excelsior" is a narrative poem in iambic tetrameter couplet-riming quatrains with a dimeter refrain, telling how a Youth gave up comforts, passed by human love, braved dangers, risked his life, and gladly and triumphantly died, in the pursuit of a dream of something higher than this life can give. In places, it marches joyously, in others it sings, and in the last two lines it cries triumphantly through the sighs of the monks.

Now, finally, this is our question, a double-barreled question: Is what the Youth did or tried to do admirable and beautiful, and is his deed admirably and beautifully told? You'll divide up into two sides on this question. I'll call one side the Ayes and the other the Noes.

Both the Ayes and the Noes will say that the first answer depends on what the Youth was after. What *was* he after? The poet doesn't *say.* The Noes will ask, "Why didn't he say?" Maybe the Ayes will reply, "Because, like the Alpine villagers, he just looked at the Youth and told what he saw and heard. The Youth didn't tell the villagers, did he? Did he tell anybody? Then how could the poet know?" But, the Noes will say, "The Youth ought to have *known.* Wasn't he just a crazy fool passing up the easy and good things to

hurry to a hard death?" The Ayes will ask, "How do you know the Youth didn't know? How do you know he wasn't after something fine and great? He died trying to reach it, and he was glad to die. He didn't *think* he was going to miss it. Could *you* always explain what you are after? Would you if you could? Aren't there some things too big to be put into words?" To this, the Noes may reply, "Yes, but a poet hasn't got any business trying to handle things too big to put into words, especially if he expects folks to understand him and agree with him. Generally that's just an excuse for moonshine and wind." And so the argument will go on between the Ayes and the Noes. I wish I could listen to it, not just try to imagine it.

The second half of our answer depends a good deal upon the first half. Perhaps the Ayes and the Noes will agree that if the Youth's deed was wrong or plain crazy no amount of pretty words and music can make it fine.

Whatever you decide about it, don't let anybody else make up your opinion for you. If you *feel* that the poem is right and fine, or if you feel that it is silly, shrill, and windy, stand by your guns until you think and feel differently. Don't take the poem on anybody's hearsay. Especially, don't let those who are prejudiced against Longfellow and the poem prejudice you. The poem has been parodied and burlesqued. But so has Hamlet's "To be or not to be" speech; so has Keats's "A thing of beauty is a joy forever"; so have many other great and beautiful poems. If people tell you that "Excelsior" is trite and hackneyed, like "The Psalm of Life," remember that once it was fresh and new. Longfellow's brother wrote, of "The Psalm of Life":

> Those who remember its first appearance know what wonderful freshness it had. . . . Young men read it with delight; their hearts were stirred by it as by a bugle summons. It roused them to high resolve, and wakened them to a new sense of the meaning and worth of life.

Don't feel ashamed if "Excelsior" stirs your heart as by a bugle summons and rouses you to high resolve. It is about a Youth. It was written by a young man who remembered that "the thoughts of youth are long, long thoughts." It was written for young people. But don't feel ashamed if you are not stirred and roused, provided you have met the poet half way and really understand what he is saying to you. Of only one thing you need be ashamed. That would be admitting you are too lazy and sodden even to hear a bugle call.

What a long letter I've written about a poem! But just about all that I have said or asked goes through a good reader's mind when he reads such a poem. I hope all this will help you and that when you have understood and felt "Excelsior" you will, for your poetry reading as well as for your whole life, adopt that young hero's motto and go on to things higher.

I cordially invite you as a class, each and all, to write me about what you get out of "Excelsior" and about what it makes you think and feel.

(Continued on Page 114)

ON QUADRATIC TRINOMIALS

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1. *Introduction.* One learns early in algebra how to multiply linear expression such as $2x - 7$ by $4x + 3$ and get quadratic trinomials such as $8x^2 - 22x - 21$. We write this product in the form

$$(2x - 7)(4x + 3) = 8x^2 - 22x - 21 \quad \ldots\ldots (1).$$

We speak of the linear expressions on the left in (1) as the *factors* of the quadratic trinomial on the right.

More generally, if

$$(px + q)(rx + s) = ax^2 + bx + c \quad \ldots\ldots (2),$$

we say that $px + q$ and $rx + s$ are factors of $ax^2 + bx + c$.

If we know the factors, multiplying them out to obtain the trinomial is an easy matter. If we suppose, instead, that we know the trinomial and wish to find the factors, there is much more to the matter. It is the purpose of this paper to consider the problem of finding these factors.

2. *Trial and error.* We shall limit ourselves, unless specified to the contrary, to trinomials whose factors have integral coefficients. This is the problem considered in elementary algebra and in the review material of college algebra. The usual method is essentially one of trial and error. Thus in order to factor

$$8x^2 - 22x - 21 \quad \ldots\ldots (3)$$

we are required to find the two factors p and r of 8 and the two factors q and s of -21 such that the sum of the "cross-products" $ps + qr$ shall be -22. We are assured that $px + q$ and $rx + s$ will be the desired factors. Our problem, then, is that of finding four integers p, q, r and s satisfying the three equations

$$\begin{aligned} pr &= 8, \\ ps + qr &= -22, \quad \ldots\ldots (4) \\ qs &= -21. \end{aligned}$$

We are usually warned that finding these integers may not be such an easy task, that first and even second trials may fail; but, we are told, if we persist, we shall succeed. An illustration is usually furnished in which the first attempt fails. Then follows the second attempt, which always (in the text) succeeds.

The general problem from this approach is that of factoring

$$ax^2 + bx + c \quad \ldots\ldots (5)$$

by finding integers p, q, r and s such that

$$\begin{aligned} pr &= a, \\ ps + qr &= b, \\ qs &= c. \end{aligned} \qquad \ldots\ldots\ldots\ldots\ldots (6)$$

3. *An important special case.* Many writers preface their discussion of the factorization of trinomials (5) with a treatment of the simpler type

$$y^2 + my + n \qquad \ldots\ldots\ldots\ldots\ldots (7)$$

in which the problem is that of finding two integers h and k such that

$$\begin{aligned} h + k &= m. \\ hk &= n. \end{aligned} \qquad \ldots\ldots\ldots\ldots\ldots (8)$$

The factors of (7) are then $y + h$ and $y + k$.

To illustrate, in order to factor

$$y^2 - 22y - 168 \qquad \ldots\ldots\ldots\ldots\ldots (9)$$

we have only to find two integers h and k such that $h + k = -22$ and $hk = -168$; where we have $h = -28$ and $k = 6$, if we agree to take h as the algebraically smaller of the two integers h and k. The factors of (9) are therefore $y - 28$ and $y + 6$.

The main advantage of this type over the former type is in the fact that we have to determine *two* integers satisfying *two* conditions instead of having to determine *four* integers satisfying *three* conditions.

4. *Simplification of the problem.* The importance of the simpler type (7) appears when we note that all trinomials of type (5) may be reduced to this simpler type (7). To see how this may be done consider the trinomial (3). We may write this

$$8x^2 - 22x - 21 = \frac{1}{8}(64x^2 - 176x - 168) =$$

$$\frac{1}{8}[(8x)^2 - 22(8x) - 168] = \frac{1}{8}(y^2 - 22y - 168).$$

The trinomial in the last parentheses is of the type (7). Its factors are $y - 28$ and $y + 6$, as seen above. From these the factors $2x - 7$ and $4x + 3$ of (3) appear upon absorbing the multiplier $\frac{1}{8}$.

The foregoing method is always available. Sometimes, however, it is possible to reduce the trinomial (5) to one of the same type with smaller coefficients. Thus we have $8x^2 - 22x - 21 = 2(2x)^2 - 11(2x) - 21 = 2y^2 - 11y - 21$, which is still of type (5), but with smaller coefficients. We proceed now to factor this, a simpler problem. The factors are $y - 7$ and $2y + 3$, from which the factors of (3) appear as in the left side of (1) upon recalling that y is $2x$. To factor this trinomial in y we could have, of course,

used the method of the first part of this section, in which the role of $8x$ and $\frac{1}{8}$ would be played by $2x$ and $\frac{1}{2}$. The coefficients m and n of (7) will then be reduced from -22 and -168 to -11 and -42, respectively, something of a gain.

Sometimes an immediate reduction to type (7) is possible without the complexity of the entire coefficient a (there 8) as a multiplier. Thus,

$$8x^2 - 22x - 21 = \frac{1}{2}(16x^2 - 44x - 42) =$$

$$\frac{1}{2}[(4x)^2 - 11(4x) - 42] = \frac{1}{2}(y^2 - 11y - 42).$$

The trinomial in y is of type (7) with the simpler coefficients $m = -11$ and $n = -42$, found in the preceding paragraph of this section.

And so generally, if an integer t is so chosen that tb has a factor f repeated in ta (or in tc), then,

$$ax^2 + bx + c = \frac{1}{t}(tax^2 + tbx + tc) =$$

$$\frac{1}{t}(f^2x^2 + mfx + tc) = \frac{1}{t}[(fx)^2 + m(fx) + tc] =$$

$$\frac{1}{t}(y^2 + my + tc).$$

The trinomial in y is of the form (5) where the first two coefficients are simpler than those of the original trinomial. That this reduction is always possible is assured by the possibility of taking $t = a$. This was illustrated first in this section where $t = a = 8$. In the second illustration we have $t = 1$. In the third we have $t = 2$. These last simplifications, while not always available, should be recognized when they are.

5. *Arrangement of terms.* Simpler than any of the foregoing methods is that of arrangement of terms. It is best seen by way of an example. Thus to factor (3) we find two integers $h = -28$ and $k = 6$ such that the sum is $b = -22$ and the product is $ab = 8(-21) = -168$. We then write

$$8x^2 - 22x - 21 = 8x^2 - 28x + 6x - 21 =$$

$$4x(2x - 7) + 3(2x - 7) = (2x - 7)(4x + 3).$$

The method is always possible if, as we here suppose, the factors are rational. In determining h and k as here required we are satisfying the demand of equations (8) for a trinomial (7) in which $m = b$ and $n = ac$. The problem of factoring (5) is thus shifted to the problem of factoring

$$y^2 + by + ac \quad \text{.....(10).}$$

thus effecting a reduction to the simpler type (7) in which the coefficient of the first degree term is unaltered and in which the con-

stant term is the product of the coefficient of the second degree term and the constant term in the original trinomial.

And so generally, as in the illustration in the opening paragraph of this section, we have always in rational cases this factorization by arrangement of terms. To do this for the general case we note first that equations (6) imply equations

$$ps + qr = b, \quad \text{.....(11)}$$

$$pqrs = ac,$$

which compared with (8) show us that we have a solution

$$h = qr, k = ps \text{.....(12)}$$

With these values for h and k and the values for a and c given in equations (6) we have

$$ax^2 + bx + c = ax^2 + hx + kx + c =$$
$$prx^2 + qrx + psx + qs =$$
$$rx\,(px + q) + s\,(px + q) =$$
$$(px + q)\,(rx + s),$$

as given in (2). This procedure will be fully justified in section 7.

6. *The use of equations.* Usually the factor theorem is deferred until a course in college algebra. This fundamentally important theorem states that if a number such as $\frac{7}{2}$ is a root of an equation such as

$$8x^2 - 22x - 21 = 0 \text{.....(13)},$$

then $x - \frac{7}{2}$, and indeed $2x - 7$, is a factor of the left side, the trinomial (3); and conversely. This fact reduces the problem of factoring quadratic trinomials to that of solving quadratic equations. In the elementary texts the order of the problems is reversed. Invariably the factors of the trinomial are obtained first, and the roots of the corresponding equation obtained from them. This procedure does not require the factor theorem, because it is easy to explain that the product of two expressions may be zero only by one or the other or both being zero.

Perhaps one of the reasons why factoring precedes solution of equations in the case of the quadratic is the relative unfamiliarity with the "$\frac{b}{2}$ -form" of the solution of the quadratic equation. If we put

$$D = b^2 - 4ac \text{.....(14)}.$$

we have for the solution of the quadratic equation

$$ax^2 + bx + c = 0 \text{.....(15)}$$

the two values

$$x = \frac{1}{2a}\,(-b \pm \sqrt{D}) \text{.....(16)}.$$

This is well known. But relatively unknown is the fact that in case b is an even integer we have the much simpler form, which we shall refer to as the "$\frac{b}{2}$-form." To secure this we have merely to notice that from (14) we have

$$d = \frac{D}{4} = (\frac{b}{2})^2 - ac \quad \ldots\ldots\ldots\ldots (17),$$

which put in (16) gives immediately for the solution of (15), when b is even, the form

$$x = \frac{1}{a}(-\frac{b}{2} \pm \sqrt{d}) \quad \ldots\ldots\ldots\ldots (18).$$

To illustrate, from (13) we have $a = 8$, $b = -22$ and $c = -21$. Therefore by (14) $D = (-22)^2 - 4(8)(-21) = 484 + 672 = 1156 = 34^2$. Now by (16), $x = \frac{1}{16}(22 \pm 34) = \frac{7}{2}$ or $-\frac{3}{4}$. By the factor theorem the factors of (3) are then $2x - 7$ and $4x + 3$.

Now compare this with the corresponding computation making use of the "$\frac{b}{2}$-form" exhibited by (17) and (18). We have from (17) $d = (-11)^2 - (8)(-21) = 121 + 168 = 289 = 17^2$. Finally from (18), $x + \frac{1}{8}(11 + 17) = \frac{7}{2}$ or $-\frac{3}{4}$. The factors $2x - 7$ and $4x + 3$ follow as above.

This method seems the best for factoring (5) in general. In computing D (or d, in case b is an even integer) we first tell whether the factors sought are rational. This will be the case, if D (or d) is the square of an integer, and only then. The zeros of (5), which are none other than the roots of (15), follow from (16), or (18). The factors are then furnished by the factor theorem.

7. *Reduced equation.* We noted in section 5 that the factoring of (5) may always be accomplished by first factoring the implied simpler trinomial (10), in some respects a simpler form. If this latter is done by solving the equation

$$y^2 + by + ac = 0 \quad \ldots\ldots\ldots\ldots (19),$$

as suggested by section 6, we find the value of D (and also of d for b an even integer) exactly the same as for the original trinomial. Thus for

$$y^2 - 22y - 168 = 0 \quad \ldots\ldots\ldots\ldots (20)$$

we have from (17), $d = (-11)^2 - (1)(-168) = 121 + 168 = 289 = 17^2$, precisely the same as the value of d obtained upon using the "$\frac{b}{2}$-form" of this test upon (13). The roots of (20) are given by (18) and are $y = 11 \pm 17 = 28$ and -6. These are $-h$ and $-k$, as these symbols are employed in section 5.

In fact, the relation between the roots of (19) and of (15)

should be more clearly pointed out. We learn in algebra that if we multiply the second term of a quadratic equation by a and the third term of the equation by a^2, we thereby multiply the roots of the equation by a. Now, if we do just this to the terms of (15), we obtain terms with coefficients proportional to those of (19). Consequently, the roots $-h$ and $-k$ of (19) are equal respectively to a times the roots $-\frac{q}{p}$ and $-\frac{s}{r}$ of (15). We are able to pair these roots off in such a definite fashion because of our agreement made in section 3 that h shall represent the algebraically smaller of the two integers h and k. It then follows that $-h$ is algebraically larger than $-k$. If now we agree, as may be done without loss of generality, to take a, p and r positive in (2), we have from (12) $qr < ps$ and $\frac{q}{p} < \frac{s}{r}$, which justifies the pairing above mentioned.

Now from (12) we are able to conclude

$$a(-\frac{q}{p}) = -h = -qr \quad \ldots\ldots\ldots\ldots (21),$$

which shows us that $a = pr$. Then from the second equation of (11) it follows that $c = qs$. We now have a complete justification for the factorization by arrangement mentioned in section 5. This relation between the roots of equations (19) and (15) thus enables us to see just how the h and the k obtained from (11) and stated in (12) lead us back again to the first and third equation of (6) and make the factorization of section 5 always possible.

Further relations between the roots of equations (19) and (15) result, when we observe that the test for rationality (14) gives

$$D = (h + k)^2 - 4hk = (k - h)^2 \quad \ldots\ldots\ldots\ldots (22),$$

actually exhibiting the squared form of D. On the right in (22) we have written the larger integer k first in order to avoid the inference that $\sqrt{D}$ may be negative. The roots of (15) are now given by (16) in the form

$$x = \frac{1}{2a}[-(k + h) \pm (k - h)] = -\frac{h}{a} \text{ and } -\frac{k}{a} \quad \ldots\ldots\ldots (23),$$

as seen above.

8. *Conclusion.* To resume, it appears that the most frequently advocated method of factoring the quadratic trinomial; namely, that of trial and error is open to three objections: 1) it is indirect, 2) it requires too many number combinations, 3) it is limited to rational factors. It appears also that both the method of factoring the simpler trinomial to which all trinomials may be reduced and the method of factoring the original trinomial by arrangement of terms possess all three of these objections, although perhaps the second of these to a lesser degree. Finally, it appears that the method of

(Continued on Page 114)

The Science Column

Conducted by CARLETON E. PRESTON

THE DEVELOPMENT OF THE SCIENCE MUSEUM IN THE HIGH SCHOOL

MARVIN N. HUNTER
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TOO OFTEN high school science teachers find themselves with little or no laboratory equipment and illustrative materials to use in reaching the desired objectives of a course in biology or general science in high school. The realization of this deplorable condition is too frequently a potent force in causing a science teacher to develop a passive attitude and resort to teaching a textbook course in science rather than make science the fascinating study that it is.

Possibly the development of a science museum or a teaching collection in high school offers a partial remedy for this condition. It may also give students an opportunity to engage in educational experiences that will create and intensify interest in science study as well as provide for individual differences to some degree.

This work might easily begin as a natural outcome of a study unit in general science. Students are as a rule naturally interested in the materials of which the earth is composed. A suggestion may be a sufficient stimulus to cause some energetic pupils to start collecting rocks and minerals from the immediate locality. Each student or group of students can prepare these to show to the class by placing them in a box divided into compartments, by fastening them to a large board, or in any other suitable manner. Each specimen should be accompanied by a card bearing the name of the locality in which it was found, the date, the name of the collector, and the name of the substance. Any other instructive information may be added. The best collections may be put on exhibit and some specimens not contained therein can be added by other pupils from time to time. In one case such an activity resulted in materials from thirty states and six foreign countries as well as many native specimens.

A start may be made in biology by encouraging students to start individual collections of insects. On the other hand, some students

will show more interest in plants. In this case these should be directed in the work of preparing a herbarium. In some cases three or four hundred plants have been gathered and prepared for exhibit by the best students. An exhibit of state flowers from each state furnishes an interesting exhibit.

It is entirely possible that the last stated idea may result in the exchange of native specimens with other schools. We have found it best to select a small town in this state or some other state and send a letter stating our desire to the biology teacher.

It pays dividends to take the seventh grade pupils near the end of the school year and talk to them about the general science course in the eighth grade. I emphasize the advantage of having a varied collection of rocks and minerals from places that might be visited during the summer. The general science class can be stimulated in a similar manner concerning materials for biology.

If it can be planned so that the science room and laboratory containing this material can be thrown open to patrons of the school on a specified date, and then if the students will give this enterprise sufficient publicity, some patrons will come to see what has been done. It might so happen that some patron has a better specimen or a different one that can be added to this material.

Then again it is possible that some professional man or person specializing in a particular hobby can be contacted by a student and interested in making a contribution in the form of specimens that he might encounter in his daily work.

In this work I have found Turtox Leaflets, obtained free from the General Biological Supply House, Chicago, Illinois, very helpful. Leaflets describing various phases of museum work may be obtained at small cost from the American Museum of Natural History, New York City, New York; these are very good. Similar publications may be obtained from the American Association of Museums, Smithsonian Institution, Washington, D. C. and The Field Museum of Natural History, Chicago.

The experience of directing some work of this type may act as a tonic to some static or bilious teacher. It will increase the materials that will aid in teaching. It offers unlimited opportunity for pupil participation in educational experiences.

The Physical Education Column

Conducted by OLIVER K. CORNWELL

THE MATERIAL presented in the following articles seemed to be particularly pertinent to some of the problems we have in public schools. We are all interested in the various ways the recess or play period may be made enjoyable and at the same time instructive for the youngsters. The first article is for the teacher primarily, while the second endeavors to set up desired student outcomes.

CONCERNING SUPERVISED PLAY PERIODS

By H. O. Hartley
Supervisor of Physical Education, Springfield, Missouri

Healthful practices—mental, emotional, social and physical:

1. A minimum period of fifteen minutes both morning and afternoon is devoted to outdoor play and big-muscle activity.

2. When other groups of children are on the playground, I have a definitely assigned space for my group activities.

3. I allow my group to go out of, and return to, the building for play activities in a natural and leisurely way—not marching in line.

4. As far as possible my attitude on the playground reflects vitality, joy, and a desire for play and the great out-of-doors.

5. I have as definite a plan for all activities during the play period as I have for all classroom activities, as:

   a. I have in mind suitable activities for the needs of the group in relation to the weather conditions, the previous classroom activities, the age level and the physiological abilities.
   b. I know all of the rules of the games to be played.
   c. I give directions quickly and accurately.
   d. I insist on fair play and good sportsmanship by enforcing the rules of the game.
   e. I see that every child is actively engaged in the activity.
   f. I start new or different activities before the children tire of the game they are playing.
   g. I give the group an opportunity to decide upon some of the activities during the period, and to have a part in directing the activities.

6. I make an effort to give less strenuous activities to those children who appear emotionally unstable, extremely underweight, anemic, and with pronounced devitalizing physical defects by:

   a. Not allowing these children to take active parts in any exciting competitive events.

b. Assigning to these children the less active parts of group games.

7. I encourage the children to wear comfortable shoes and clothing hanging loosely from the shoulders to promote freedom of movement.

8. I wear comfortable low heel shoes and loose clothing to enable me to more actively participate in and enjoy the activities with my group.

9. I give the more strenuous and active games at the beginning of the play period and more quiet and less active at the end of the period.

10. My group of children is provided with an ample supply of bats, balls, and bean bags for various games and relays.

11. I make an effort to prevent over-fatigue on the playground by:

a. Frequent change of activities.
b. Not too strenuous and exciting activities.
c. Not too frequent exciting competitive contests or relays.
d. Selection of activities to meet the psychological, physiological and social needs of the group.
e. Big-muscle activities—natural activities.
f. Opportunities for quiet games.
g. Games for muscular relaxation.
h. Good ventilation in the classroom when bad weather prevents outdoor play.

12. I help the children to promote good postural development through playground activities by:

a. Giving games with elements of reaching upward and climbing and stretching movements.
b. Using such methods of mental and emotional stimulation as listed under situation 5.

13. On rainy days and during inclement weather appropriate physical activities are conducted in the classroom or in a room especially provided for this purpose.

14 I make every effort to encourage and promote good sportsmanship and fair play throughout all playground activities by:

a. Practicing good sportsmanship myself in giving directions, making decisions, being firm and positive, but patient and kind.
b. Having a few definite standards of action for all children and seeing that at all times standards are acted upon, such as:
   (1) Being quiet and attentive while directions for the game are being given.
   (2) Giving prompt attention to whistle or other signals.
   (3) Keeping the rules of the game.
   (4) Respecting and abiding by the decisions of the umpire.
c. Commenting favorably upon outstanding evidence of good sportsmanship.
d. Giving activities in which each child can develop certain skills within his ability.
e. Giving children opportunities for the development of initiative and leadership.

15. Children are given from three to five minutes at the end of each supervised play period to attend the toilet and get a drink of water before returning to the classroom. (No game or play activities allowed during this period).

The purpose in the minds of those who made this analysis was, of course, to change practices, and also to lead teachers to an understanding of some of

the basic principles of health education, for example, that health is a way of living and not a school subject. We are asking the teacher to look at the child as a whole rather than to emphasize special skills or subject matter.

Some Objectives and Policies Suggested for Emphasis at Particular Age-Grade Levels

As suggested by a committee of the American Physical Education Association, W. W. H. Mustaine, Chairman.

Kindergarten

For Physical Fitness

- Sense development
- Normal physical growth
- Much activity of large muscles—climbing, etc.
- Happiness and joy in activity
- Control of fundamental movements of the body
- Adequate periods for real relaxation and rest
- Removal of all remediable defects

For Mental Health and Efficiency

- Happy school atmosphere
- Interest in normal play
- Self-expression through spontaneous activity
- Direct self-expression into worthy channels
- Opportunity to exercise curiosity
- Opportunity to solve simple play situations
- Answer simple questions clearly
- Orientate children in essential adjustments of group life

For Social-Moral Character

- Ability to play happily with others
- Courtesy and unselfishness
- Share equipment with other children
- Respect the property rights of others
- Small responsibilities in the way of housekeeping
- Respect the authority of the teacher; cheerful response
- Counteract anti-social tendencies

For Emotional Expression and Control

- Be happily occupied
- Control temper; get along without tantrums
- Satisfy curiosity; overcome timidity
- Control of desire to occupy the lime-light
- Avoid over-excitement
- Sympathetic, affectionate attitudes

For Appreciations

- Enjoyment of fresh air and freedom
- Enjoyment of companionship with playmates
- Enjoyment of play, and of rhythm
- "Turn about is fair play"
- Get the essential meaning of ownership rights
- Love of pets
- Appreciate the action of certain physical forces—gravity, etc.

Primary Grades

For Physical Fitness

- Neuro-muscular and organic development
- Muscular activity of great variety
- Active outdoor play without accumulated fatigue
- Adequate periods for relaxation and rest
- Simple large muscle coordinations; control of fundamental movements
- At least B grade posture for this level

Opportunity to learn to swim, and to skate
Health practices

For Mental Health and Efficiency

Happy school atmosphere
Activities of interest and within capacity for achievement
Opportunities for exercise of memory
Opportunities for imagination and imitation—dramatic plays
Know the rules of simple games
Follow simple directions accurately
Develop attitudes of perseverance and mastery

For Social-Moral Character

Take turns willingly
Be kind to smaller children
Simple duties of leadership
Learn to share all belongings
Develop standards of action through imitation
Control self-assertiveness
Honesty; truthfulness; self-reliance
Obedience

For Emotional Expression and Control

Develop happiness and satisfaction in activity
Creative motor expression
Play without getting angry, or jealous
Play without screaming
Control tendency to quarrel
Control emotions when hurt
Proper balance between success and failure
Overcome inhibitions
Cooperative obedience without resentment
Avoid causing fear

For Appreciations

Enjoy being clean, and in being in a clean, attractive environment
Love of nature—outdoor life, grass, trees, etc.
Appreciate simple musical rhythms
Joy in creative activities
See the need for safety
Recognize the principle that for freedom of action one must observe the rights of others
Approve good playing by others

ELEMENTARY GRADES

For Physical Fitness

Establish attitudes favoring physical activity
Ability to play a game of playground ball without over-fatigue
Progress in skills—coordinations involving accessory muscles
Rhythmic activity
Maintain good posture and develop good body mechanics
Absence of remediable health defects
Motivate health habits

For Mental Health and Efficiency

Wholesome attitude toward work and play
Enjoyment of simple game skills
Alertness to changes in game situations
Understand the reasons for things done
Know the first aid for cuts, burns, and bruises
Sense of rhythm
Ability to measure self by others on same age-grade level
Right thinking with reference to social relationships
Know that exercise promotes growth and strength
Develop powers of discrimination

For Social-Moral Character

Accept responsibilities; opportunities for elementary leadership
Ability to act as leader of exercises or games
Cooperation; follow a captain
Ability to compete without rancor

Play own position in a game
Courtesy and consideration for others
Sense of loyalty
Tolerance; truthfulness; sense of honor

For Emotional Expression and Control

Attitudes of cheerfulness and confidence
Not to give way to temper; play without fighting
Avoid frequent feeling of being wronged
Avoid extremes of emotional expression—outbursts
Wholesome satisfactions of curiosity, adventure, and "gang" tendencies
Experiences that encourage further participation
Sense of humor
Direct egotistical tendencies into helpful physical channels

For Appreciation

Advantages of being healthy; cleanliness of person, clothing, and surroundings
Enjoyment of vigorous activity, and of relaxation
Enjoyment of more advanced rhythmic activities
Appreciate correct performance; enjoy effort and achievement
Appreciate possibility of further growth and development
See the need for an umpire; the value of accepting his decisions
See the advantages of readiness to act—alertness
Note the action of physical forces—leverage, momentum, etc.
"The Golden Rule"

JUNIOR HIGH SCHOOL

For Physical Fitness

Normal motor reactions
Attitudes, power, and ability to participate in sports
Ability to gauge one's own physical limits
Normal weight for type of build
Rhythm, agility, speed, and variety of skills
Proper food and adequate sleep
At least B grade posture, and efficient body mechanics
Special attention to individual needs

For Mental Health and Efficiency

Normal interest in objective activities
Know essential rules of games
Know essential rules for keeping healthy
Insight into simple problems of activity situations
Development of more advanced skills
Sustain interest in activity
Ability to keep score or record test scores accurately
Ability to exercise judgment, make correct choices, etc.
Constructive pupil-teacher relationships

For Social-Moral Character

Practice in more advanced responsibilities
Cooperate with team mates in games
Understand the meaning of teamwork
Put group welfare above selfish, individual desires
Wholesome ambition; good sportsmanship
Be democratic
See need for respecting authority
Control of sex problems
Direct anti-social tendencies into constructive channels

For Emotional Expression and Control

Favorable environment
Wholesome physical outlets for nervous tension, and emotional expression

Stand getting roughly handled without getting angry or frightened
Stick to a difficult task or a losing game without giving up
Control tendency to "show off" too much or to be "withdrawn"
Give opportunities for growth of appreciations
Develop ability to face difficulties; face the facts
Recognize social standards of emotional reactions
Teacher should not antagonize; treat pupil "like a man," "like a woman"
Know the factors that affect emotions

For Appreciations

Enjoy a bath and change of clothes after exercise
Enjoy camping out
Know the value of social adjustments; have wholesome loyalties
Appreciate the value of discrimination and evaluation
Appreciate good taste, and manners
Satisfactions in self-control
Meaning of sportsmanship
Healthful leisure—time activities
Understand the practical and esthetic values of physical skills

SENIOR HIGH SCHOOL

For Physical Fitness

Bring to realization the values of recreative sports
Habit of keeping in "condition"
Expertness in a few chosen activity skills for enjoyable use after school days
Control of strains and drains on nervous vitality
Develop strength and endurance; grace and poise
Have normal strength index
Helpful mental, social, and emotional habits in relation to physical fitness
Personal health self-control; few if any colds, etc.
Good habits and proper amount of sleep

For Mental Health and Efficiency

Intelligent interest in activity to insure carry-over
Advanced game skills
Ability to analyze motor skills
Ability to use skills to interpret thoughts and ideas
Know the rules of all games played
Ability to solve problems arising in game situations
Think for oneself
Consider physical education as a part of the social heritage

For Social-Moral Character

Fair play and sportsmanship
Friendly attitude toward students and athletes of opposing schools
Play without quarrelling with officials
Self-direction in relation to the changing social order
Take responsibility as a leader or follower
Use rivalry and competition in accordance with ideal social standards
Use building and all equipment carefully
Emphasize promptness in meeting social obligations
Organization and management of activities by pupils themselves

For Emotional Expression and Control

Cultivate impersonal attitudes—intellectual reactions
Control feelings as spectator or participant in athletics
Be intelligent about one's "wants," "likes," etc.
Develop poise—Avoid "alibis"

(Continued on Page 114)

The English Column

Conducted by PRESTON C. FARRAR

TRAINING PUPILS TO THINK

(Continued from the February Issue)

Assuming that the teacher of English is himself a careful, discriminating thinker, let us consider what he can do to develop right habits of thought in his pupils. If he is the kind of thinker that he ought to be, he is already doing the first thing that he can do for the mental habits of his pupils—setting them a good example and letting them see daily how a logical mind works, how it deals with the many questions that arise for its consideration. But that will not be enough. The teacher's attitude toward the problem must be more positive, more active. He must have faith that it is possible to improve the thinking of the average person. He must keep himself free from the too common feeling that nothing can be done about other peoples' bad reasoning anyway. Most reasoning, we hear, is merely wishful thinking, or rationalizing to justify one's decisions or prejudices. We all know people with whom it is impossible to argue, people whose facile minds are ever ready to meet each fact presented with new arguments as illogical or irrelevant as their last. So why try to make their minds over? Why worry about them? With many mature minds no doubt that is the best advice—the only wise advice. But to apply the same suggestion to young people whose mental habits have not become fixed seems to me a counsel of despair. In them is hope, if there is hope.

If, then, the teacher's own habits of thinking can serve as a worthy example for his pupils, and if he has an attitude of confidence toward his problem, what attitudes, what habits will he try to develop in his pupils? First of all, I think, he will try to arouse in them a strong love of the truth as an ideal to be sought, and an intense desire to get at it no matter where it leads. Along with this must grow the realization that the only ultimate source of truth for an intelligent person is his own reason. If he knows too little of a subject to reach a reasoned decision on the questions at issue, and consequently accepts a book or man or an institution as an authority on it, it must be

because that acceptance satisfies his reason. And with this conviction about the supremacy of reason should come the further realization that the only thing that should satisfy the reason is evidence. The reasoner himself must be the judge of that evidence, whether it is direct evidence on the facts or theories in question or evidence of the trustworthiness of an authority.

In this connection the teacher will take pains to establish in his pupils the habit of critical examination of all evidence and a willingness to inquire into the sources of their own opinions. He will encourage not a hostile, but a questioning, even a skeptical attitude toward statements unsupported by convincing proof, and will welcome the practice of holding judgment in abeyance until that proof is produced. He will discourage the practice, too common in young people, of believing whatever is printed in a book, and the equally unjustifiable assumption of some older people that one can believe nothing that appears in the newspapers. He must try to induce an attitude of perfect open-mindedness, of being willing and able to look at a question from different points of view. And that means that he will try to eliminate or subordinate the element of conflict that is the essence of most debating—the desire to defend a position, an interest, a prejudice previously acquired, and to defeat an opponent in argument—and will try to substitute for it an attitude of inquiry and investigation. At least he will try to have pupils postpone taking an attitude of attack or defense until after open-minded consideration of the grounds of their beliefs. It is an open question whether a good deal of the debating, especially in the debating contests, carried on in some communities does not do more harm than good to those who participate. The charge is made that it leads to one-sided investigations, or more often to acceptance of one-sided views without investigation, to the subordination of real inquiry to the desire to win, and to intellectual dishonesty. The open forum type of discussion may eliminate some of these objections.

Aside from developing the attitudes and habits suggested above, the good teacher will lead pupils to be discriminating in the use of terms. He will train them to define their terms, to see to it that terms are used in the same sense by both sides in an argument, and will show them that much utterly futile discussion results from the failure to do this. He will try to have them avoid a too ready acceptance of generalizations and the use of general terms which they cannot make concrete by citing specific examples. And above all, in inductive thinking, he will train them to avoid drawing general conclusions from too few examples.

Now, how can the teacher do all this? By what methods, what activities, what materials? In the first place he must give children a chance to think. They will never learn by having some one else do their thinking for them. May the last mentioned practice possibly account for those people who never learn to think for themselves, but make for the book shelves at the first suggestion of a problem calling for thought? The teacher can furnish the opportunity children need by requiring them to think out and discuss problems in class.

In the next place the teacher must always be ready to help the pupil by his criticism and questions. He should never allow fallacious reasoning to pass unchallenged. And here, by the way, he will usually find questions a much more effective method of exposing a fallacy than assertions. This great need of showing pupils unsuspected mistakes in their reasoning suggests the weakness in the current idea that pupils will learn to think if only they are given unlimited opportunity to talk. Life situations, we are told, are the latest panacea. Offering pupils life situations in which to react and express themselves is now all that is necessary for their education. But in these "situations" as they ordinarily conduct themselves, what do we find? A group of untrained intellects asserting prejudices, expressing snap impressions, growing heated in defense of inherited opinions, losing themselves in irrelevancies and getting nowhere. Free discussions of this type give pupils a chance to develop fluency and ease, but unless wisely guided and followed by intelligent criticism they contribute little toward the improvement of their thinking. To accomplish that purpose the teacher must constantly show the pupils exactly what is wrong with their reasoning or their knowledge.

In order to do this effectively the teacher should give the class some elementary instruction on the most common fallacies. There is little if any need to label fallacies, and certainly none to give them the Latin names of the older textbooks. The emphasis should all be on seeing that the pupil understands the mistake in reasoning and learns to avoid it. It is good to see that some comparatively recent English textbooks have chapters on this work. The section in Hitchcock's High School English Book called "Adventures in Thinking" is really a very elementary chapter on logic. Miss Helen Rand's English at Work, Fourth Book, contains a good deal of exercise material on right thinking, which might, however, be better organized. Cushwa and Cunningham I have already mentioned.

In the teaching of literature there are many opportunities for training pupils to think. In fact, an entire article might be written on this part of the subject. I can now merely touch on a few points. In the first place I am sure that many teachers do not encourage their

pupils to think enough about what they read. They expect them to understand it and accept it and hope that they will remember something about it. But they do not urge them to question the truth or the value of it and reach their own conclusions about it. Some parts of the high school course are better suited than others to the development of logical thinking in pupils, though there is no part that may not serve this purpose in some way. Argument is of course the best field for it, and every high school course ought to contain some argumentative literature whether in the form of essays or speeches. Most of it should be read in the senior year. Literature of this kind ought to be taught largely with the purpose of training pupils' reasoning powers. Pupils should be questioned on the validity and completeness of the proof offered. They should be required to state the author's argument. When, as often happens, they leave out some essential step, they should be shown, preferably by other pupils, how this omission destroys the whole argument. Briefing, although once greatly overdone in schools, has its value, and pupils may well be given a little practice in briefing suitable passages.

Other forms of literature, especially fiction and drama, give fine opportunity for reasoning about the conduct of characters, the justification, the causes, the effects of acts or motives. Moreover, these discussions add greatly to the interest of the pupils in the book they are reading.

In composition work, oral or written, not based on books there is unlimited opportunity for training pupils to reason. In criticising argumentative and expository compositions, teachers should pay particular attention to the value and soundness of the writer's thought.

One of the most valuable kinds of exercise to train the thinking ability of pupils is consideration of current articles in magazines or newspapers or of speeches which pupils have heard or read. No more suitable material for discriminating discussion is available than can be found in some of the editorials in our daily papers or in the quoted speeches of politicians. Pupils in upper classes should be required to read newspaper editorials or columnist articles and to select and write criticisms of those that are especially vulnerable. Pupils who write very good criticisms should be urged to send them as letters to the editors or the politicians. They would be performing a praiseworthy civic duty and might conceivably exert a wholesome influence upon the writers of the articles criticised. At any rate these exercises would make pupils read something besides the sporting page and the beauty column in newspapers, and by interesting them in the great questions that are stirring the world to-day would help prepare them for intelligent citizenship.

The French Column

Conducted by HUGO GIDUZ

IN THE last issue of this JOURNAL Mr. Farrar, in his English Column gave us the first portion of an article entitled "Training Pupils To Think."

One sentence above all others strikes one: "Probably in no other subject are the rich opportunities for training pupils to think neglected so much as they are in English."

It may be unethical to differ with a colleague in public on such a vital matter as this. However, my difference is only one with that part of his statement which says that "in no other subject" are these opportunities so much neglected. I feel certain that in French the neglect is fully as great as in English. I'll not make the boast that they are more neglected!

As a matter of fact I believe that we may use any subject in the curriculum as a vehicle for teaching our pupils how to think. Unless we do that the bare facts of our subject matter will be of little value. In my classes I frequently tell my students that unless they do learn to think they are wasting their time, for the little French that they can acquire in the classroom will for the most part be lost to them in a comparatively short time. Very few of them will have use for the language in later life, but all of them will need to use the ability to think clearly—if they have ever learned to do it.

We can develop this ability in our teaching of grammar and reading. If we use phonetics to teach pronunciation we can develop this ability there. In learning to use the idioms the student must think clearly if he would do other than parrot-like memorize the idioms as given him. Learning to use the oral language offers a fine opportunity to develop clear thinking. But this thinking will not come to the students without conscious effort on the part of the teacher to lead him to think. For the most part teachers simply permit students to repeat mechanically the material presented to them. That accounts for the poor results obtained. Let us try to teach more clear-cut methods of thinking through a problem, whether it be the translation of an English sentence into French, or a problem in mathematics, or an English composition, and we shall soon find that the French, the mathematics, or English, or any other subject, will of necessity and of themselves, improve.

Permit me to recommend here the article by Mr. Farrar in last month's issue, and the conclusion found elsewhere in this issue.

The Latin Column

Conducted by J. Minor Gwynn

Issues of Prime Import Face High School Classical Teachers at State Meeting in March

THE annual gathering of the State Latin Teachers Association takes place in Raleigh on Friday, March 18, at 3:00 p.m. in the Hugh Morson High School. The Association is affiliated with the North Carolina Education Association, whose annual general and sectional meetings will be held in Raleigh at the same time, March 17-19.

President B. W. Davis, of the University of North Carolina, has arranged for a program which will have more than average drawing power both because of the speakers contracted for and because of the round-table discussion which will be held to consider and lay plans for the crisis confronting the teaching of the classics in the state.

The tentative program is as follows:

Presiding, President Benson W. Davis, University of North Carolina.

Address: Dr. H. M. Poteat, Wake Forest College.

"Means of Vitalizing Latin from the Student's Viewpoint", Mrs. A. V. G. Wishart, Lumberton High School.

Round-Table Discussion of Critical Problems Facing Latin Teachers in This State, Based on a Recent Survey.

Leader, Mr. B. W. Davis.

President Davis is also State Chairman for the Committee on the Present Status of Classical Education of the Classical Association of the Middle West and South, of which Dr. A. P. Wagener, College of William and Mary, is the Association chairman. In working with the teachers in the state in connection with this larger study,[1] he has been gathering information in regard to the actual numbers studying Latin, the number of teachers, the localities without opportunities for Latin study in their schools and why, the attitude toward the subject on the part of school administrators, community groups, and individuals, and the facilities available for the maintenance and furthering of Latin study. Although his figures

[1] The High School Journal, Vol. XXI, pp. 69-70 (February, 1938).

were necessarily incomplete at the time that this issue had to go to press, his preliminary investigation points toward a life and death struggle for the continued existence of Latin in the high school curricula of the state. His data also indicate rather clearly a steady decline in the enrollment and study of *foreign language* in the state high schools, an alarming feature which was commented upon in last month's *Column*.

It is not within the province of this commentator to anticipate Chairman Davis' final figures and facts, which he will undoubtedly make public at an appropriate time after he has completed his investigation. But it is permitted with his consent and approval to call attention to several steps that might aid believers in the classics in their critical struggle to retain Latin in the secondary schools.

Primarily, there is strength in union. For many years the Latin teachers have had a state organization. For over ten years this organization has had separate Latin teachers' branch organizations in the six general district organizations of the N. C. E. A. Much has been done through these sectional group meetings every fall to stimulate classical teachers to study their task and improve themselves in resources, in materials, and in methods of teaching in service. It is pointed out by President Davis and by other past presidents of the state body that the State Association is supposed to contain proper representation from the various district organizations for the purpose of coordinating the efforts of all the classical teachers in a better teaching, understanding, and promotion of the classics. In actuality the State Association is not so formed. The time and expense involved in a two-day journey to some central city for the state meetings prevent several of the districts from being represented consistently or at all, since there is no provision for such absence without a corresponding loss of salary for the payment of a substitute teacher from the representative's own pocket. The conflict of general and special educational meetings of compelling interest with the Latin program on the same day and frequently at the same hour hinders some regularly constituted delegates from attendance. A third factor operates to keep the state organization from being truly representative and truly effective, namely, its loosely-knit structure and its lack of provision for proportional representation. This is not the fault of any official(s), nor is any particular person to blame for a purely structural defect. The machinery itself by which the state group exists should be overhauled to allow and to encourage state-wide participation of an active nature.

Chairman Davis suggests two procedures that might at least be

considered as points of departure in remedying existent defects in the organization and functioning of both district and state associations. *For each district* he sees the need of a *permanent* committee to guide and direct classical activities in that sector. It would not seem to make any difference whether this permanent committee was chosen by ballot of the entire group, or was partly appointive, provided its personnel did not change completely each year. This could be cared for by some such general administrative procedure as electing two members of the committee every other year for a six-year term, vacancies during term of office to be filled by the remaining members of the committee from the geographical sector due to be represented. *For the State organization* Mr. Davis is seriously considering the recommendation of the election or appointment of a permanent Executive Secretary, whose duties would comprise such various things as: the keeping of records on Latin enrollment, and teachers; the securing and distribution of materials on the teaching of Latin; the collection of data for research and publication in the field of high school Latin teaching as well as of materials for the furtherance and promotion of the classics; visiting the various district meetings and committees to assist them in their work; etc. Such a proposal involves expense, of course. Yet it is about time that classical teachers awoke to the fact that unless they look after themselves and their subject, there will soon be no subject to look after and someone will have to care for them. A part-time State Secretary would require the expenditure of at least $400 to $600 yearly, and a full-time person would require a minimum budget of perhaps $1,500.

The idea of holding the annual State Association meeting and programs at a time other than the state-wide North Carolina Education Association sessions in March might well be considered. Such a separate meeting would permit concentration solely upon Latin business, and might be productive of more stimulating programs, of a larger number of varied and interesting papers upon both the secondary and collegiate levels, and of more stimulating and intimate acquaintance in things personal as well as classical. Nothing in this suggestion would prevent continued affiliation with the North Carolina Education Association.

In conclusion, this writer hopes that all Latin teachers who are in good health will travel to Raleigh for the afternoon of March 18, chock full and running over with good ideas of a constructive type to help to meet the grave situation confronting the classics in the state.

"EXCELSIOR": A LETTER TO MISS BICKLEY'S CLASS

(Continued from Page 91)

I hope that many of you will come to Chapel Hill and learn more about the Three R's. If you do, remember that I am trying to teach two of the Three R's here all the time, and the other one a good deal of the time. If I can help you, please look me up.

In the meantime, I wish you and Miss Bickley a very happy Christmas. May you find your stockings full of pretty things that came out of boxes packed with—*excelsior*. And may these things and your happiness remind you of "Excelsior."

Very sincerely yours,

ARTHUR PALMER HUDSON
Professor of English,
Chairman of Freshman Composition

ON QUADRATIC TRINOMIALS

(Continued from Page 97)

solving the quadratic equation obtained by equating the trinomial to zero (obtaining the zeros of the trinomial) and using these roots to obtain the factors from the factor theorem is far superior. In support of this contention it is claimed 1) that this approach is direct, 2) that it requires no number combinations beyond the squares of numbers and 3) it is applicable whether the factors are rational or not. It can not be urged too strongly that in all cases in which b is an even integer, the "$\frac{b}{2}$-form" outlined in (17) and (18) be employed invariably as making for material simplification.

THE PHYSICAL EDUCATION COLUMN

(Continued from Page 105)

Continue an activity despite minor bumps or scratches
Control of "drives," "crushes," etc.
Be keen to participate in activities
Relaxation—"constructive composure"

For Appreciations

Skillfulness in personal health management
Enjoy having a strong, efficient, well-formed body
Responsibility for the health and safety of others, including the next generation
Appreciate the beauty of skillful performance
Bring out the fine ideals of health and social-moral character
Orderliness in thinking and acting; value of good judgment
Emotional control in relation to social adjustment
Self-discipline; knowledge of own capacities and limitations
Appreciate the meaning of responsibility, as leader or follower
Develop appreciation of healthful habits of exercise, bodily efficiency and hygienic living

BOOK REVIEWS

Educational, Psychological, and Personality Tests of 1936. OSCAR K. BUROS. Rutgers University, 1937. 141 pp. $ .75.

The volume before us assembles and classifies alphabetically the vast number of tests and books appearing in 1936 in the field of tests and measurements of mental traits. The first division (forty-five pages) lists alphabetically and comments upon the tests which have appeared in 1936. It gives the name of the test, its publishers, its function, the school level to which it applies, the time it takes to administer, its cost, and the names of its authors. Moreover, when discussions have appeared about the tests in the technical journals the references are listed. The reviewer believes that the reliability of each test should have been added as well as something about the population on which the test was standardized. If to this information could have been added a critical evaluation of each test the usefulness of the volume would have been greatly enhanced.

The second part of the volume contains an alphabetized bibliography of *books* bearing on measurements. Under each book are printed reviews selected from the various journals. In this manner a critical evaluation of each book is offered. This feature is an especially valuable one since it shows that the same book receives quite discrepant evaluations. The last section contains a publishers' directory and index, a periodical directory and index, and indexes by titles and by authors of the contents of the present volume.

All told, this book is a valuable aid to workers in the field. Its usefulness could have been greatly enhanced by furnishing critical evaluations of the tests.

A. M. J.

Talking Pictures: How They Are Made, How to Appreciate Them. BARRETT C. KIESLING. Johnson Publishing Co., 1937.

The author presents the motion picture as a mosaic. Each tile or process which goes into the mosaic is explained in simple terms. The book is written from inside the moving picture industry and so vividly presented that it approximates a personal visit behind studio walls. Two hundred and seventy-six arts, professions, and vocations make their separate contributions. The work of specially qualified artisans carries the reader through the various processes, from the selection of the story; the research; the preliminary work on sets, properties, costuming, casting; the photography, through the production of finished prints. The artistic productions of today are explained in terms of the study and experimentation, the failures and successes that have marked the progress of the motion picture business. One sees the distinctive techniques of experts merge workmanship of many hands into a composite. This composite is so deftly accomplished that the casual visitor to a photoplay theatre is not aware of the separate titles, but only the final whole.

The book is written in interesting, almost conversational tone. It presents the complicated processes of motion picture production in understandable words. Classes in high school and college will find this book a valuable reference of the motion picture industry.

CHARLES F. MILNER.

Occupations. JOHN M. BREWER. Ginn and Company, 1936.

The purpose of this book as stated by its author is "to help young people to understand the workers of the world and the kinds of work they do."

Part I. "Your Education and Your Work" contains a discussion of occupations of the past and present, the relation of education to work, the relation of citizenship to work and self discovery, and the occupational information useful to success.

Part II. "Some Important Kinds of Work" consists of a study of specific occupations. Homemaking as a job has been analyzed and discussed along with other domestic and personal occupations.

Part III. "Vocational and Life Adjustments" considers the planning, preparing for, and starting of a chosen vocation. Economic problems which concern wage earning and ownership are discussed. The final chapter deals with some of the choices and adjustments which are to be made by the individual.

As a result of the study of the material as presented in this book, the young person should be aided in choosing a vocation which will bring him happiness and success. V. M. P.

Fundamentals of Personal Hygiene. WALTER S. KRUEGER. W. B. Saunders Company, 1936. $1.35.

This new edition includes the newest knowledge concerned with *healthful living.* Suggestions which will aid in making good health habits function in everyday life are presented in a simplified but impressive manner. V. M. P.

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